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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/841,719	04/24/2001	Gregorz J. Czajkowski	SUN-P5695-RSH	6289

22835 7590 06/14/2004

PARK, VAUGHAN & FLEMING LLP  
508 SECOND STREET  
SUITE 201  
DAVIS, CA 95616

EXAMINER
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ANYA, CHARLES E

ART UNIT	PAPER NUMBER
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2126

DATE MAILED: 06/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/841,719	CZAJKOWSKI ET AL.	
	Examiner	Art Unit	
	Charles E Anya	2126	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3/MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Claims 1-27 are pending in this application.
2. For full consideration of this application please furnish the office with the prior art references cited on pages 3,4 and 6, namely "Efficient software fault isolation" by Wahbe et al., "Safe Kernel Extensions without Runtime Checking" by Necula et al, "TALx86: A Realistic Typed Assembly Language" by Morrisett et al. and "A Case for Embedding the JVM into Apps" by Morgenthal et al.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-8,10-17 and 19-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,442,752 B1 to Jennings et al. in view of U.S. Pat. No. 6,574,673 B1 to Hari et al.**

5. As to claim 1, Jennings teaches a method to automate isolation of native code within a computer program that has been compiled to a code ("... first environment.../... second environment..." Col. 4 Ln. 17 – 22), the method comprising:

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receiving a library containing a native code sub-routine, wherein the native code sub-routine provides a service to the computer program (first DLL Col. 4 Ln. 44 – 50, figure 6 Col. 35 – 38), analyzing the library to determine a defined symbol name for the native code sub-routine (“...identify...” Col. 4 Ln. 44 – 50, figure 6 Col. 35 – 38), creating a proxy sub-routine for the native code sub-routine, wherein the proxy sub-routine forms a link to the native code sub-routine (“...source code skeleton...” Col. 4 Ln. 44 – 50, figure 6 Col. 39 – 45), placing the proxy sub-routine into a new library using the defined symbol name of the native code sub-routine as a symbol for the proxy sub-routine (“...second DLL...” Col. 4 Ln. 44 – 67, figure 6 Col. 55 – 63), running the native code sub-routine in a first process (“...second environment...” Col. 4 Ln. 17 – 22), executing the code in a second process (“...first environment...” Col. 4 Ln. 17 – 22) and invoking the native code sub-routine in the first process by calling the proxy sub-routine from the code in the second process (Col. 4 Ln. 17 – 22).

6. Jennings is silent with reference to a computer program that has been compiled to a platform-independent code, however Jennings does indicate the application/program code (application 54) could be an interpreted language (Col. 17 Ln. 17 – 34).

7. This notwithstanding Hari teaches a computer program that been compiled to a platform-independent code (figure 3 Col. 6 Ln. 45 – 67, Col. 7 Ln. 1 – 14).

8. It would have been obvious to one of ordinary skill in the art at the time the invention was made combine the teachings of Hari and Jennings because the teaching

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of Hari would improve the system of Jennings by providing code that would invoke native routines (Col. 7 Ln. 7 – 14).

9. As to claim 2, Hari teaches the method of claim further comprising: providing a proxy platform-independent native interface (PINI) to the library containing the native code and transparently transforming local PINI calls into calls to the proxy PINI wherein transforming local calls to the proxy PINI preserves an original control flow, wherein upcalls and downcalls are guaranteed to be executed by a same thread of a process that executes the native code sub-routine (figure 2 "...proxy routines..." Col. Col. 6 Ln. 11 – 42).

10. As to claim 3, the method of claim 1, wherein analyzing the library to determine the defined symbol name includes analyzing the library to determine call arguments for the defined symbol name (Col. 7 Ln. 35 – 38).

11. As to claim 4, Although Jennings as modified by Hari is silent with reference to the method of claim 3, wherein analyzing the library to determine call arguments for the defined symbol name is accomplished at runtime by analyzing a current call frame, this limitation would be inherent since the parameters and procedure names would in its stack frame.

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12. As to claim 5, Jennings teaches the method of claim 3, further comprising copying call arguments from the proxy sub-routine to a call to the native sub-routine (Col. 4 Ln. 58 – 63, Col. 7 Ln. 50 – 55).

13. As to claim 6, Jennings teaches the method of claim 3, further comprising returning a result value from the native code sub-routine to the proxy sub-routine (Col. 5 Ln. 13 – 20).

14. As to claim 7, Jennings teaches the method of claim wherein operations in the first process are isolated from memory and other system resources belonging the second process so that an error in the first does not, one of, corrupt memory belonging to the second process and interface with the second process in anyway (Col. 4 Ln. 17 – 22, Col. 8 Ln. 22 – 28, figure 12 Col. 12 Ln. 49 – 64).

15. As to claim 8, Jennings teaches the method of claim 1, wherein the proxy sub-routine and the native code sub-routine communicate through inter-process communication (Col. 8 Ln. 22 – 28, figure 12 Col. 12 Ln. 49 – 64).

16. As to claims 10 – 17 and 19 – 26, see the rejection of claims 1 – 8 respectively.

**17. Claims 9, 18 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,442,752 B1 to Jennings et al. in view of U.S. Pat.**

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**No. 6,574,673 B1 to Hari et al. as applied to claim 1 above, and further in view of  
U.S. Pat. No. 6,481,006 B1 to Blandy et al.**

18. As to claim 9, Jennings and Hari as modified as silent with reference to the method of claim 1 wherein forming the link to the native code sub-routine includes translating a data element from a first address width in the computer program to a second address width in the native code sub-routine.

19. Blandy teaches the method of claim 1 wherein forming the link to the native code sub-routine includes translating a data element from a first address width in the computer program to a second address width in the native code sub-routine (Col. 5 Ln. 13 – 26).

20. It would have been obvious to one of ordinary skill the art at the time the invention was made to combine the teachings of Blandy, Jennings and Hari because the teaching of Blandy would improve the system of Jennings and Hari by providing floating point values conversion (Col. 5 Ln. 13 – 26).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E Anya whose telephone number is (703) 305-3411. The examiner can normally be reached on M-F (8:30-6:00) First Friday off.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, An Meng-Ai can be reached on (703) 305-9678. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charles E Anya  
Examiner  
Art Unit 2126

cea.



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SUPERVISORY PATENT EXAMINER  
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